said functional interface provides functionality adapted to the particular hardware of said transaction machine and said transaction device.

35. The method of claim 34 wherein said transaction machine further comprises a data communications interface and wherein said transaction machine is adapted to communicate over said data communications interface.

36. A method for providing transaction services according to claim 34 wherein the transaction machine is selected from a group consisting of an automatic teller machine, an electronic kiosk and an electronic point of sale machine.

37. A method for providing transaction services according to claim 34 wherein said middleware software comprises a series of transaction objects and controls for performing standardized device functions.

38. A method for providing transaction services according to claim 37 wherein said transaction machine further comprises a customizable user interface.

39. A method for providing transaction services according to claim 38 wherein said transaction objects are independent of said user interface.

40. A method for providing transaction services according to claim 39 further comprising a plurality of controls, at least one of which comprises a capabilities interface.

41. A method for providing transaction services according to Claim 40 wherein the capabilities interface can communicate the capabilities of the control.

42. A method for providing transaction services according to claim 37 wherein applications, objects and controls are concurrently operable.

43. A method for providing transaction services according to claim 37 wherein controls are constructed with an event generating capability and wherein a said controls are operable in a selectable mode in which said events are queued up and delivered to an application on demand.

44. A method for providing transaction services according to claim 34 wherein said middleware software is adapted to provide service in accordance with at least one software standard for interacting with different hardware systems.

45. The method for providing transaction services according to claim 44 wherein said at least one software standard is selected from a group consisting of WOSA XFS, OPOS, OFX, TOPEND®, ActiveX®, Javabeans, SNMP.

46. A method for providing transaction services according to claim 34 wherein all errors and transgressions are asserted by the middleware software.

47. A method for providing transaction services according to claim 34 further comprising the step of the middleware software writing trace data to memory and then copies it to disk only when the transaction machine is idle.

48. A method for providing transaction services according to claim 34 further comprising a web browser.

49. A method for providing transaction services according to claim 48 where said at least one software application is operable from within said web browser environment.

50. A method for providing transaction services according to Claim 49 wherein said web browser provides support for software distribution.

51. A method for providing transaction services according to claim 49 further comprising a web browser frame containing at least one device control operable to detect events which must be responded to upon occurrence.

52. A method for providing transaction services according to claim 48 wherein said middleware software comprises a plurality of COM components having a scriptable ActiveX® interface.

53. A method for providing transaction services according to claim 48 wherein said middleware software comprises a plurality of Javabeans™ components having a scriptable interface.

54. A method for providing transaction services according to claim 48 wherein said web browser is adapted to communicate with conventional web sites to be displayed by the computer-based transaction machine.

55. A method for providing transaction services according to claim 48 wherein middleware software allows or disallows access to particular web sites according to a rule database.

56. A method for providing transaction services according to claim 48 wherein middleware software is adapted to customize time-out of the display of individual internet web sites.

57. A method for providing transaction services according to claim 34 wherein the computer-based transaction machine is adapted to allow the software applications and middleware to be altered across a network by an authority.

58. A method for providing transaction services according to claim 34 wherein the transaction machine is adapted to communicate status information to a remote station.

59. The method for providing transaction service of claim 37 wherein said at least one of said transaction objects provide, separately or in combination with other transaction objects and controls, encapsulation of software logic required for performing at least a portion of a transaction.

60. The method of claim 37 wherein at least one of said controls is a device control, providing abstraction of details of a device controlled by said device control.

61. The method of claim 37 further comprising the step of creating a separate thread for each of a plurality of controls.

62. The method of claim 35 further comprising the step of enabling said application program to communicate over said communication interface through a control.

63. The method of claim 37 wherein at least one of said controls implements an OFX interface or a portion thereof, to facilitate communication with an OFX server.

64. The method of claim 34 wherein said middleware software provides generic error handlers.

65. The method of claim 35 further comprising configuring a plurality of transaction machines, and wherein configuration data for said step of configuring is centrally held in a distribution file.

66. The method of claim 38 further comprising the step of constructing said user interface using common web authoring tools.

67. The method of claim 34 wherein said operating system is Microsoft Windows NT.

68. A computer based transaction machine comprising:

at least one transaction device, having a set of capabilities inherent thereto;

an operating system to communicate with, and control said transaction device;

at least one software application having a user interface, and adapted for execution under control of said operating system;

middleware software adapted to interact with said operating system and with said software application, said middleware software having a functional interface adapted to provide an interface to particular hardware capabilities of said transaction machine; and,

wherein said middleware software further comprising an application programming interface adapted to provide communication and control services with said transaction device to said software application.

69. The computer based transaction machine of claim 68 wherein said transaction machine further comprises a data communications interface and wherein said transaction machine is adapted to communicate over said data communications interface.

70. A computer based transaction machine according to claim 68 wherein the transaction machine is selected from a group consisting of an automatic teller machine, an electronic kiosk and an electronic point of sale machine.

71. A computer based transaction machine according to claim 68 wherein said middleware software comprises a series of transaction objects and controls for performing standardized device functions.

72. A computer based transaction machine according to claim 71 wherein said transaction machine further comprises a customizable user interface.

73. A computer based transaction machine according to claim 72 wherein said transaction objects are independent of said user interface.

74. A computer based transaction machine according to claim 73 further comprising a plurality of controls, at least one of which comprises a capabilities interface.

75. A computer based transaction machine according to Claim 74 wherein the capabilities interface can communicate the capabilities of the control.

76. A computer based transaction machine according to claim 71 wherein applications, objects and controls are concurrently operable.

77. A computer based transaction machine according to claim 68 wherein controls are constructed with an event generating capability and wherein a said controls are operable in a selectable mode in which said events are queued up and delivered to an application on demand.

78. A computer based transaction machine according to claim 68 wherein said middleware software is adapted to provide service in accordance with at least one software standard for interacting with different hardware systems.

79. The computer based transaction machine according to claim 78 wherein said at least one software standard is selected from a group consisting of WOSA XFS, OPOS, OFX, TOPEND®, ActiveX®, Javabeans, SNMP.

80. A computer based transaction machine according to claim 68 wherein all errors and transgressions are asserted by the middleware software.

81. A computer based transaction machine according to claim 68 further comprising the step of the middleware software writing trace data to memory and then copies it to disk only when the transaction machine is idle.

82. A computer based transaction machine according to claim 68 further comprising a web browser.

83. A computer based transaction machine according to claim 82 wherein said at least one software application is operable from within said web browser environment.

84. A computer based transaction machine according to Claim 83 wherein said web browser provides support for software distribution.

85. A computer based transaction machine according to claim 83 further comprising a web browser frame containing at least one device control operable to detect events which must be responded to upon occurrence.

86. A computer based transaction machine according to claim 82 wherein said middleware software comprises a plurality of COM components having a scriptable ActiveX® interface.

87. A computer based transaction machine according to claim 82 wherein said middleware software comprises a plurality of Javabeans™ components having a scriptable interface.

88. A computer based transaction machine according to claim 82 wherein said web browser is adapted to communicate with conventional web sites to be displayed by the computer-based transaction machine.

89. A method for providing transaction services according to claim 82 wherein middleware software allows or disallows access to particular web sites according to a rule database.

90. A computer based transaction machine according to claim 82 wherein middleware software is adapted to customize time-out of the display of individual internet web sites.

91. A computer based transaction machine according to claim 68 wherein the computer-based transaction machine is adapted to allow the software applications and middleware to be altered across a network by an authority.

92. A computer based transaction machine according to claim 68 wherein the transaction machine is adapted to communicate status information to a remote station.

93. The computer based transaction machine of claim 71 wherein said at least one of said transaction objects provide, separately or in combination with other transaction objects and controls, encapsulation of software logic required for performing at least a portion of a transaction.

94. The computer based transaction machine of claim 71 wherein at least one of said controls is a device control, providing abstraction of details of a device controlled by said device control.

95. The computer based transaction machine of claim 71 further comprising the step of creating a separate thread for each of a plurality of controls.

96. The computer based transaction machine of claim 71 further comprising the step of enabling said application program to communicate over said communication interface through a control.

97. The computer based transaction machine of claim 71 wherein at least one of said controls implements an OFX interface or a portion thereof, to facilitate communication with an OFX server.

98. The computer based transaction machine of claim 68 wherein said middleware software provides generic error handlers.

99. The computer based transaction machine of claim 69 further comprising configuring a plurality of transaction machines, and wherein configuration data for said step of configuring is centrally held in a distribution file.

100. The computer based transaction machine of claim 72 further comprising the step of constructing said user interface using common web authoring tools.

101. The computer based transaction machine of claim 68 wherein said operating system is Microsoft Windows NT.

102. A network comprising a plurality of computer-based transaction machines according to claim 68, one or more networking means and one or more application servers.

103. An Extranet formed by combining a plurality of networks of computer-based transaction machines according to claim 102.

104. An Extranet according to claim 103 provided with a security mechanism which limits the hardware functionality available to individual software applications.

105. A method of providing transaction services comprising the steps of:
operating by a first organization a computer based transaction machine controlled by at least one software application to affect a transaction service;
wherein said software application is provided by a second organization , wherein said software application provides an transaction type different than the transaction type associated with said first organization.

106. A method for selling tickets comprising the steps of:
operating, by a first organization, a computer based automated teller machine having a data communication interface, a display device, an input device, and at least one transaction device adapted for user identification;

executing a software application on said computer based automated teller machine, said software application being adapted to issue tickets for events or services provided by a second organization; and,

automatically charging a user account for said ticket utilizing facilities provided by said automated teller machine.

107. The method of selling tickets of claim 106 wherein said tickets are selected from a list comprising airline tickets, cinema tickets and theatre tickets.

108. A method for selling tickets comprising the steps of:

operating, by a first organization, a computer based kiosk having a data communication interface, a display device, an input device, and at least one transaction device adapted for user identification;

executing a software application on said computer based kiosk, said software application being adapted to issue tickets for events or services provided by a second organization; and,

automatically charging a user account for said ticket utilizing facilities provided by said kiosk.

109. The method of selling tickets of claim 108 wherein said tickets are selected from a list comprising airline tickets, cinema tickets and theatre tickets.

Remarks

Upon entry of PCT application PCT/GB99/00927 into US national stage under 35 USC §371, applicant replaced all claims pending in the application to conform to US practice, and to better point out and more distinctly claim his contribution.